

REMARKS

In response to the office action mailed December 2, 2006, applicant certainly appreciates the indication of allowance of a number of the claims if amended to become independent, incorporating the requirements of the base claim and any intervening claims. However, applicant has amended the independent claims and submits that they are allowable as amended. Applicant requests that withdrawn claims 11 and 16 be reinstated and allowed because they depend from claims that applicant submits are allowable. Applicant is enclosing a petition to extend time for one month. Please charge the fee to Baker Hughes, Inc. deposit account 02-0429.

Applicant respectfully traverses the rejection of claims 1-3, 5, 11, 12, 14, 17 and 18 over Fox and respectfully requests reconsideration. Fox explains that prior art bits caused cone 14 to run eccentrically on bearing pin 18 when loaded. Fox teaches that the eccentric running of cone 14 is detrimental because it resulted in uneven squeeze on elastomeric seal 9. Seal 9 would be squeezed excessively on the lower side of bearing pin 18 and insufficiently on the higher or unloaded side (Col. 3, lines 14-18 and 39-43). Fox teaches to remedy the eccentric squeeze by offsetting the axis of the cone relative to the bearing pin in a direction and by an amount so that the axes will be concentric when loaded (Col 3, lines 18-20; 45-49; Col 4, lines 6-8).

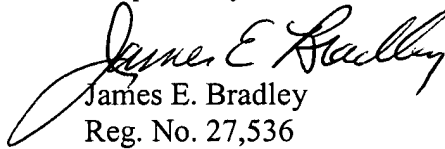
In applicant's invention, the clearance between the cone and bearing pin at the mouth of the cone cavity is constructed to have an eccentricity when the bit is loaded during operation, thus is reverse to Fox. In the preferred embodiment, the cone mouth is eccentric not only when unloaded, but also when loaded. This change in volume of the clearance creates a pumping action to circulate drilling fluid from the cavity during operation.

Claim 1 as amended requires that the annular surface of the cone have at least one portion spaced closer to the annular surface of the bearing pin than at least one other portion when the bit is unloaded and while loaded. In Fox, when loaded, there is no portion spaced closer when loaded because the cone moves from an eccentric position to a concentric position.

Claim 2 requires that the seal cavity have a volume that differs when measured at one circumferential point than other circumferential points while the bit is unloaded and while loaded. Claim 11 requires that the seal cavity have a radial width that varies so that as the cone rotates when the bit is unloaded and when loaded, the width of the seal cavity at any point along the outer diameter portion of the bearing pin changes at least once per revolution of the cone. Claim 17 requires that the mouth of the cavity be circular about an axis that is offset from the axis of the bearing pin while the bit is unloaded and while loaded. The claims thus all distinguish from Fox.

Applicant respectfully submits that the application is now in condition for allowance and respectfully requests favorable action.

Respectfully submitted,


James E. Bradley
Reg. No. 27,536
Attorney for Applicant

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BRACEWELL & GIULIANI LLP
P. O. Box 61389
Houston, Texas 77208 1389
Tel: (713) 221-3301
Fax: (713) 222-3287